

mechanical leverage of the spinous processes. It does not so well insure a strong and permanent fusion as the Hibb's operation, which directly obliterates the zygapophyseal articulations, lays down two lateral bridges of laminar shavings and a central bridge formed of the broken-down spinous processes. This operation is a rather tedious procedure and destroys the mechanical leverage of the spinous processes.

For many years Hunkin has used tibial grafts placed upon the denuded laminae against the bases of the spinous processes on either side. This operation often produces good results, but provides only an uncertain contact of the surfaces of the grafts with the irregular surfaces of the laminae and spinous processes, and does not directly block the zygapophyseal articulations.

Magnusen bolts the spinous processes together with ivory screws and plates. This foreign body fixation, although it undoubtedly secures immediate temporary immobilization, probably does not often result in strong or permanent fusion. Metal plates used in a similar way by some European surgeons are even less commendable.

Grantham (*Journal of Bone and Joint Surgery*, October, 1927), describes a method of fusion by insertion of a tibial graft in a tunnel, made at the base of the spinous processes with a special grooved osteotome. This would appear to be a rather dangerous resort to "blind" surgery and of limited application.

In CALIFORNIA AND WESTERN MEDICINE, May, 1924, the writer described a method of fusion by double tibial grafts sawed to shape and placed deeply within the cancellous bone of the split laminae in such way as directly to block the zygapophyseal articulations. At either end of the fused area portions of the spinous processes are left *in situ*, thus preserving the mechanical leverage of the spines. This method requires rather tedious technique, but insures a strong and early fusion.

Operation should be limited to the fusion of the damaged segment or segments to each other and to one unimpaired segment above and below. The extension of the fusion to include further undamaged joints is a needless sacrifice of function and tends only to weaken the center of the fused area because of the increased leverage upon it exerted by the longer rigid elements above and below.

Rest in recumbency and mechanical support during early ambulatory convalescence are just as essential after fusion operation as in the so-called conservative treatment without operation. Fusion only hastens and improves the degree of recovery when it is used in conjunction with and not to supplant other rational measures of treatment.

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Ophthalmology

Iritis—There are two diseases that might be confused with an acute iritis, namely, acute conjunctivitis and acute inflammatory glaucoma, and these two diseases must be eliminated before treatment of iritis can be given.

In an acute conjunctivitis there is no actual pain, except a photophobia and a feeling as if sand was in the eye. The pupil reacts to light. The lids stick together, especially in the mornings; and secretion can be seen in the conjunctival sac. If in doubt, it will do no harm to use one drop of a 2 per cent homatropin to see if the pupil dilates evenly.

An acute inflammatory glaucoma generally affects a person of middle age or past. It comes on suddenly with a severe pain in the eye, and is generally severe enough to produce vomiting. The cornea rapidly becomes hazy and insensitive. The pupil is dilated and immovable. The anterior chamber is shallow. The vision is rapidly cut down to perception of shadows.

Iritis is an acute inflammation of the iris and ciliary body. There is increased photophobia and lacrimation, but no pus. The pupil is small, the cornea clear, and the anterior chamber is of normal depth. There is a circumcorneal injection fading toward the fornix. The pain radiates to the temple of the affected side and is worse at night. If homatropin is used the pupil dilates irregularly, due to adhesions to the capsule of the lens.

Iritis is a local manifestation of a constitutional condition. There is a focus of infection somewhere that has to be located, and this focus can be found in practically every case if search is thorough enough. Brown and Irons¹ in their series of two hundred cases found syphilis alone caused twelve, gonococcal infections eight, tuberculosis eight, dental infections twelve, tonsillar infections twenty-six, sinus infections one, genitourinary without venereal infection six, and other infections three.

After finding and eliminating the cause, active treatment to the eye must be instituted and kept up until all danger of adherence of the iris to the anterior capsule of the lens has passed. Atropin in a 1 or 2 per cent solution instilled into the conjunctival sac three times a day will usually break up recent adhesions and keep the iris free. In the event that these adhesions will not tear loose, then with the patient in a reclining position, a 4 per cent cocain solution is instilled three or four times; a speculum is introduced; the bulbar conjunctiva is grasped with a small fixation forceps and a subconjunctival injection of three minims of 4 per cent cocain combined with 7 minims of adrenalin is done. This will usually free the adhesions, or at least a part of them. A few days later this may be repeated until all adhesions are freed. After the injection is made the patient should be kept in a reclining position and warned that his heart

1. Brown and Irons: The Etiology of Iritis. Transactions of Section on Ophthalmology, A. M. A., 1923.

may beat rapidly, but that he need not be alarmed.

In those chronic cases of iritis with an increased tension from complete adhesions, or in those cases of cataract where there is a complete adhesion, an iridectomy should be done, then an iris speculum introduced and all adhesions freed, being careful not to injure the lens.

Anesthesia for such an operation is best obtained by morphin and scopolamin, combined with local cocain and by blocking the ciliary ganglion by a deep orbital injection of 4 cc. of 2 per cent novocain.

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Dermatology and Syphilology

Bromid Eruptions and Their Treatment— Skin lesions due to bromids result from idiosyncrasy for the drug or from accumulation of bromin in the system. The latter may be due to numerous underlying causes. These eruptions vary from stubborn acne, with ugly indolent pustules, to large abscesses, ulcers or granulating areas resembling blastomycosis. Also various nervous symptoms may develop. Manifestations of bromism *may persist a long time after use of the drug has been discontinued*, and bromin will continue appearing in the body fluids.

Udo J. Wile and his co-workers in the department of dermatology and syphilology of the University of Michigan have developed a simple and effective method whereby the bromin producing these symptoms is quickly eliminated, with rapid subsidence of the skin lesions. In the July, 1927, number of the *Journal of the American Medical Association* (Vol. 89, No. 5, pp. 340-41), Wile describes his method, and gives references to his previous investigations of this subject. A new and simple modification of the test for bromin in body fluids as devised by G. H. Belot, is also described.

It was found that "ingested bromid was with difficulty passed through the renal epithelium. Salts of bromin tend in consequence to be stored up in the tissues of the body. Bromid displaces the chlorid ion in the body, the ingestion of the former leading to rapid elimination of the latter with consequent chlorid deficiency. In cases of bromid intoxication the intravenous injection of physiologic sodium chlorid solution leads to the liberation of the bromid from the tissues, occasionally accompanied by a sharp renal irritation. The replacement of bromid in the tissue by chlorid immediately favorably influences the symptoms of bromism, notably those in the nervous system and in the skin, causing their rapid involution."

For the initial dose, Wile injects intravenously 100 to 150 cc. of physiological salt solution. If well tolerated it is increased to 300 to 400 cc. given twice weekly. Naturally patients showing renal irritation are not good subjects for this treatment.

I have been able to obtain similar good results in several cases. Recently Dr. Stuart Way and I observed the subsidence of a bromin acne in

four days after the administration of sodium thiosulphate.

Harold Cole and Wile both find that x-ray treatment of the lesions while the patient is receiving sodium chlorid causes the lesions to disappear much more rapidly than without radiation. Several clinicians have found that sodium chlorid given by mouth (in enteric-coated tablets) acts very well, but of course the intravenous administration is preferable.

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Dermatology and Syphilology

The Grenz Ray—The recent announcement of the development of a new agent, the Grenz or infra-roentgen ray, in the treatment of disease has stimulated the interest not only of dermatologists, but of physicians in the field of general medicine. Bucky¹ has studied the effects of these rays experimentally and clinically with the following results:

The rays occupy a position between the ultra-violet and roentgen rays, and consist of electromagnetic oscillations of wave lengths of about two Angström units. They produce entirely new biologic effects, differing both from ultra-violet and roentgen rays. Bucky believes that the Grenz rays will replace roentgen rays in dermatology, at least so far as superficial therapy is concerned. The rays are entirely harmless because with the proper technique they are absorbed by the upper layers of the skin, saving the germinative layers. Promising results from this form of therapy have been observed in disturbance of the autonomic and endocrine systems. The acute symptoms of ulcer of the stomach and intestines have been quickly relieved following irradiation of skin areas of the trunk. Bucky has secured very encouraging results in cases of polycythemia, peritoneal tuberculosis, diabetes, angina pectoris, bronchial asthma and chronic irritative cough in children.

In the dermatologic field such diseases as pruritus, eczema, acne rosacea, lichen planus, pruritus ani, ringworm of the scalp, paronychia, warts, mycosis fungoides, Kaposi's sarcoma, epithelioma, carbuncles, and furuncles have been successfully treated.

Bucky mentions the following practical advantages of the method: probability of absolute safety, possibility of replacing changed skin with normal, markedly shortened healing period, remarkable cosmetic results, lack of danger of repeated irradiation and new indications, such as the influencing of internal organs by the skin.

Considering the wide range of usefulness of roentgen rays and ultra-violet rays it may not be too much to hope that further clinical data will substantiate these findings.

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1. Bucky, Gustav: Actual Superficial Therapy by "Grenz" (Infra-Roentgen) Rays, Arch. Derm. and Syphil., 15:672, June, 1927.